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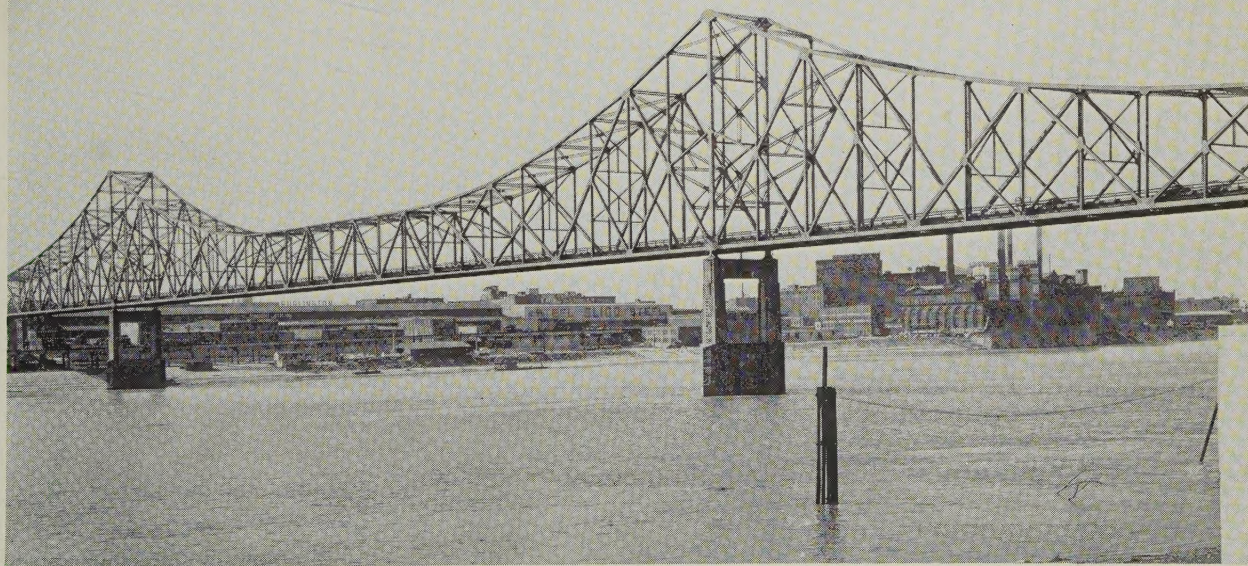
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the **ILLINOIS ENGINEER**



ANNUAL MEETING ISSUE

ANNUAL MEETING
East St. Louis
March 25-26-27



VETERAN'S BRIDGE—BETWEEN EAST ST. LOUIS AND ST. LOUIS

★ ★ ★
THE ILLINOIS ENGINEER, MARCH, 1954—VOLUME XXX, NO. 3

Address all communications to the Society at 631 East Green St., Champaign, Illinois.
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Affiliated with the National Society of Professional Engineers

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Of Professional Interest

THE ILLINOIS ENGINEER—THIS MONTH

The 69th Annual Meeting

The Annual Convention—held in late March for the past three or four years—is always the high point of the Society's activities. This year will be no exception. The St. Clair Chapter and its numerous committees have worked long and hard to produce what they hope and expect to be an outstanding, well attended series of business and social events in East St. Louis on March 25-26-27.

The Men's Program holds its usual interest; officers' and committees' reports concerning the accomplishments of the year just completed, installation of new officers, the annual luncheon and banquet, inspection trips, greeting old friends, and so on, and so on. These events are expected and always anticipated with pleasure.

What is unusual about this year's Annual Convention is the unique Ladies' Program. Three days of fun, frolic, and of course some business put on by the enthusiastic St. Clair Chapter's Ladies' Auxiliary. This exciting program should be a definite stimulation to the already rapidly growing interest in chapter auxiliaries. Take your wife to this year's convention so that she can learn how she can help the Society and the engineering profession through auxiliary activity.

W. A. OLIVER, Editor.

DEMENT SPEAKS IN SPRINGFIELD

George DeMent, ISPE national director, brought news to Capital Chapter of NSPE's vigorous activities. Twenty-seven men joined with George, Tuesday, January 26, 1954 at the Elks Club in Springfield to discuss professional engineering activities on a national scale. As the evening advanced, the comments pointed out that organized national efforts are as fully in order as are those required of a solid State Society.

—Capital Chapter Chatter

COST OF LIVING INDEX

The cost of living correction factor to be applied to the I.S.P.E. Schedule of Minimum Fees and Salaries was 192.1 for December, 1953. This factor is based upon a 1935-39 average taken as 100.

At the present time the Bureau of Labor Statistics is basing its Consumer Price Index upon a 1947-49 average. The figure of 192.1 given above has been converted from this average. This would seem to be the logical method of presentation until the Society publishes a new Fees and Salaries Schedule established upon the 1947-49 base.

Malay proverb: One can pay back the loan of gold, but one dies forever in debt to those who are kind.

PRESIDENT'S MESSAGE

The 69th year of the Illinois Society of Professional Engineers is rapidly drawing to a close. I shall always be proud of the confidence you placed in me when you elected me to be your President. I hope I have justified your faith in me. If my year at the helm has in any measure been successful, I owe much to the wholehearted cooperation given by so many individual members, the Board of Direction, the many committees, the Secretary, the Executive Secretary, and the Editor-in-Chief and Associate Editor of the ILLINOIS ENGINEER, and the chapter officers and members who were so cordial when I visited at their meetings. To all of these fine people, I say—"Thanks!"

I say "Thanks" to my superiors at the Alton and Southern Railroad who so graciously allowed me time to fulfill my obligations to I.S.P.E.

When I assumed office, a year seemed adequate for fulfilling many of my dreams of progress for the Society, but a year goes by so quickly and many major accomplishments move so slowly.

I have observed our Society's operation at the chapter level, and I am sure, as a whole, a fine job is being done; however, as individuals, we could each and every one contribute a little more to the advancement of our profession.

During the past month, we have obtained an "historic first" for I.S.P.E. in the formation of a Student Chapter at Bradley University of Peoria. To the members of the first Student Chapter, we of the Profession express a most hearty welcome.

We have long needed to do more about the young engineer and the engineering student. They represent the future lifeblood of the Society. I hope the time will come when we can assist deserving students in their quest for higher engineering education by establishing scholarship funds at both Chapter and State levels.

Even with the limited time, we were able to accomplish much, as will be revealed by the reports of our commit-

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SUBSCRIPTION RATES

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tees at the coming Annual Meeting. The groundwork has been laid. It is expected that, during the coming year, the tempo will be continued on important long-range items pertaining to public interest, unity of the Profession, public relations, young engineers, the status of State, County, City, and other municipal engineering employees and the industrial engineer of diversified fields. Continued tempo is expected to be placed on the work to eliminate the inconsistencies between the several State statutes that concern the Engineering Profession, and that leading State and municipal appointive positions and Bureau heads of engineering be required to be Registered Professional Engineers. Among other items will be the revision of certain parts of the Engineering Registration Acts to constitute a real protection to life, health, and property, as it was originally intended, and taking the lead in encouraging a state-wide building code.

It is a pleasure to hand over the leadership of our Society to such an able successor as Mr. C. W. Klassen. Please give him and our incoming Vice-President, Dwain M. Wallace, the fine support you have given me.

RAYMOND G. BRICHLER, President.

BRADLEY STUDENT CHAPTER CHARTERED

P. E. ROBERTS, Executive Secretary

Another milestone was reached by the Illinois Society on February 10th when a Student Chapter Charter was issued to the undergraduate engineers of Bradley University in Peoria.

The movement to organize a Chapter was begun last fall by Edwin B. Stear, Student Honorary Member, selected by Peoriarea Chapter in 1953. When President Brichler spoke to the Chapter last fall, the possibilities of organizing a chapter were discussed. At the January Board of Direction meeting, the Constitutional Amendments Committee was asked to prepare a draft of a constitution which would fill the needs of a student chapter.

On February 10, twenty-three young engineering students met in the Bradley University library. They went over the draft of the constitution and with the help of Dean Russell Gibbs and Professor Arthur Dini, some changes and additions were made. The proposed constitution was sent to the Board of Direction for its study and approval. The following officers were elected by ballot: Edwin B. Stear, president; Roger R. Stevens, vice-president; Alvin W. Polich, secretary; James F. Gunion, treasurer; James C. Barton and Roger M. Laible, directors.

I.S.P.E. Secretary-Treasurer A. Douglas Spicer presented the Charter with some appropriate remarks following which twenty-three young men affixed their signatures. Vice-President Elect Dwain M. Wallace and Executive Secretary Roberts both made short talks.

Peoriarea Chapter is to be congratulated in successfully promoting the first Student Chapter of the Illinois

Society. *A long and useful existence to the newest member of the Illinois Society's family of Chapters.*

I.S.P.E. 1954 STATE CONVENTION COMMITTEES

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M. GARCIA.....	Secretary
S. PETRAITIS.....	Treasurer

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THE DREAMER

I once knew a man who would figure and plan the deeds he intended to do, but when the time came to get into the game, he never put anything through. He would dream with a smile of the after-a-while, and the deeds he would do "pretty soon." He was all right at heart, but he never would start—he never could get quite in tune.

If he would have done half the things he begun, he'd be listed among those of fame, but he didn't produce, so he was of no use—good intentions do not win the game.

It is easy to dream, to plan and to scheme, and let them drop out of sight, but the man that puts through what his dreams bring to view, is the man who does win the fight.

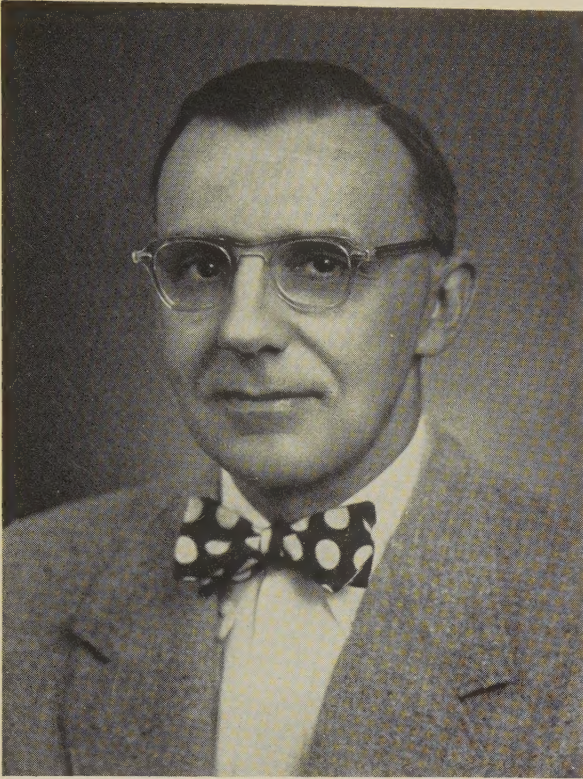
—EDGAR L. JONES

A man is poor not because he has nothing, but because he does nothing.

Talkers will refrain from evil speaking when listeners refrain from evil hearing.

—BULWER

Officers To Be Installed At 69th



C. W. KLASSEN

President-Elect C. W. Klassen

President-Elect Klassen has been an active member of the I.S.P.E. since 1926, becoming a National Member in 1946. He has served on many committees. He was Chairman of the Water Supply Section in 1931, General Chairman of the Sewerage Section in 1938, Chairman of the Prize Essay Committee in 1939, and Member and Chairman of the Publicity Committee in 1946 and 1947. During the past several years he has been Chairman of the Civil Defense Committee, keeping in contact with the developments taking place in that important activity both in the state and in the nation at large.

Mr. Klassen is a graduate of the University of Michigan in civil engineering. He has been with the Illinois Department of Public Health since 1925 and has served as Chief Sanitary Engineer of the Department since 1935 with the exception of three years during the war when he served as Major of the Sanitary Corps of the Army. In addition to the duties listed above, Mr. Klassen is Technical Secretary of the Sanitary Water Board and Associate Professor, College of Medicine, University of Illinois. He holds memberships in a number of technical and professional societies. He is a member of the vigorous Capital Chapter in Springfield.

The Society looks forward to a prosperous year under the leadership of Mr. Klassen.



DWAIN M. WALLACE

Vice-President-Elect Dwain M. Wallace

In proposing Mr. Wallace as its official nominee for Vice-President, the Nominating Committee followed a long established precedent, whereby state officers have been selected from among members having a record of long service to the Society. He became a member of I.S.P.E. in 1936 and a national member in 1945. During the years of his membership he has been active on many committees. Recently he played a part in the establishment of the Society's first student chapter at Bradley University in Peoria. He also assisted in the formation of the Peorians Chapter which he represented on the Board of Direction in 1951-52.

Mr. Wallace is owner of Wallace Engineering Co., Professional Engineers and Surveyors, Peoria. Prior to the formation of his own firm, he had been associated with Mr. Jacob A. Harmon, veteran member of the Illinois Society, from whom he purchased his present business in 1951. Earlier he had been employed as Assistant Engineer, with the White Engineering Co., and also served in the elective office of County Surveyor from 1932-1936.

He is a Registered Professional Engineer and Licensed Land Surveyor in Illinois. He is a member of the American Society of Civil Engineers, the Western Society of Engineers, and the American Congress on Surveying and Mapping.

This brief biography indicates the suitability of Mr. Wallace for the office to which he has been elected.

Program 69th Annual Meeting East

MEN'S PROGRAM

Registration Desk will be open 7 p.m. to 10 p.m. Wednesday,
March 24th

Thursday, March 25

Morning

- 7:30 Board of Direction Breakfast
8:00 Registration—Main Lobby
8:30 Board of Direction Executive Meeting—Tower Room
(Members of Society are invited to observe)
12:00 Luncheon—Dubonnet Room
Presiding: S. C. Casteel, P.E.
Formal Opening of Annual Meeting
Ladies present
Invocation: Rev. Arthur B. Smith, Pastor
First Presbyterian Church of East St. Louis
Flag Presentation: Boy Scouts
Introductions:
A. J. Feickert, P.E., St. Clair Chapter President
R. G. Brichler, P.E., State President
Welcome Address: Hon. Alvin G Fields, Mayor,
City of East St. Louis
Welcome Address: O. D. Meyer, President,
East St. Louis Chamber of Commerce
Address: Lt. Gen. Robert W Harper, Com-
mander Air Training Command, U.S.A.F.

Afternoon

- 1:30 Panel Discussion of Water Supply Shortage and
Proposed Legislation—City Club
2:00 Resumption of Board of Direction Meeting—
Tower Room
Industry Tours

Evening

- 5:30 Social Hour—Refreshments, Courtesy Portland
Cement Association. Ladies present. Du-
bonnet Room
6:45 Smorgasbord and Entertainment — St. Clair
Chapter, hosts. Ladies present. Dubonnet
Room

Friday, March 26

Morning

- 8:00 Registration—Main Lobby
8:30 69th Annual Meeting of the Society—Ball Room
Presentation of President-Elect Clarence W.
Klassen, P.E., and Vice-President-Elect Dwain
M. Wallace, P.E.
12:00 Luncheon—Dubonnet Room
Presiding: President R. G. Brichler, P.E.
Invocation
Address: Vera M. Binks, Director of Depart-

ment of Registration and Education

Address: T. Carr Forrest, Jr., P.E., President,
N.S.P.E.

Afternoon

- 2:00 Resumption of 69th Annual Meeting—Dubonnet
Room
3:00 Address: Clarence W. Klassen, P.E., on recent
experiences in Borneo and Far East
5:00 Adjournment of 69th Annual Meeting

Evening

- 5:30 Social Hour—Refreshments—St. Clair Chapter,
hosts. Ladies present. Tower Room
7:00 Annual Banquet (dress optional)—Ball Room
Presiding: Fred J. Meek, P.E.
Invocation: Rev. James Bernard Macelwane,
S.J., Dean of Institute of Technology,
St. Louis University
Presentation of Past-President's Certificate to
President R. G. Brichler, P.E., by President-
Elect Clarence W. Klassen, P.E.
Address: Dr. Curtis L. Wilson, Dean of Missouri
School of Mines and Metallurgy
9:00 Dancing

Saturday, March 27

Morning

- 7:30 Board of Direction Breakfast
8:30 Organization and Meeting of the 70th Board of
Direction—General membership invited—Du-
bonnet Room
12:00 Luncheon—70th Board of Direction—Oak Room

Afternoon

- 1:15 Adjournment

LADIES' PROGRAM

Wednesday, March 24

Evening

- 7:00 to 9:00 Meet and Greet—Mrs. Earl W.
Markwardt, Chairman

Thursday, March 25

Morning

- 8:00 Registration: Mrs. Melvin Dobbs, Chairman;
Mrs. Charles Manion, Co-Chairman
8:30 Meet and Greet Room open—Play cards, chat
with friends, or shopping.
12:00 Luncheon with men. S. C. Casteel, Master of
Ceremonies

—See Men's Program—

Afternoon

- 2:00 Speaker: Mrs. Maurice K. Lenny
Topic: Personality Traits Through the Zodiac

St. Louis - March 25-26-27, 1954

Card Party—Mrs. F. G. Olbrich, Chairman;
Mrs. S. Daniels, Co-Chairman

Evening

5:30 Refreshments with men. Courtesy Portland Cement Association

6:45 Smorgasbord and Entertainment

Friday, March 26

Morning

8:00 Registration

9:00 Breakfast—Mrs. S. C. Casteel, Chairman;

Mrs. D. M. Murphy, Co-Chairman

Speaker: Mrs. Jeannette Elliott of Television Station WTVI. Topic: "Mad Hatter."

11:00 Auxiliary Meeting—

Mrs. D. J. Johnston, presiding

Introduction:

T. Carr Forrest, Jr., President of N.S.P.E.

Reports from Auxiliaries Nos. 1, 2, and 3

12:30 Nose Bag Lunch. Gray Line Tour of Historic St.

Louis. Mrs. G. W. Kennedy, Chairman; Mrs.

D. J. Johnston, Co-Chairman

Evening

5:30 Refreshments with men

7:00 Banquet with men—Fred J. Meek, Master of Ceremonies. Dress optional.

—See Men's Program—

9:00 Dancing

Saturday, March 27

Morning

9:30 Meet and Greet Room open. Entertainment will be arranged

12:00 "Dutch Treat" Lunch

Afternoon

1:15 Adjourn

PRIZES

SOUVENIRS

— SURPRISES —

SPEAKER AT ANNUAL BANQUET

Dr. Curtis L. Wilson, Dean of Missouri School of Mines and Metallurgy, was born and raised in Baltimore, Maryland. After graduating from Baltimore City College in 1916, he went west and enrolled at Montana School of Mines in Butte, graduating in 1920. He worked as assistant research engineer for Anaconda Copper Mining Company until 1921, when he joined the faculty of Montana School of Mines as instructor in Metallurgy. He did graduate work at Columbia University in New York during the summers of 1923 and 1924, and then in 1926 went to Europe where in 1928 he received his Ph.D. from the University of Goettingen in Germany. He returned to Montana School of Mines as Professor of Met-

allurgical Engineering and in 1941 came to Rolla, Missouri, to his present position.

He is the author of a number of technical articles on research metallurgy and co-author of the book "The Metallurgy of Copper," published in 1942.

He has been a member of the American Institute of Mining and Metallurgical Engineers since 1920 and has served on the AIME Board of Directors. He has been Chairman of the Mineral Industry Education Division,



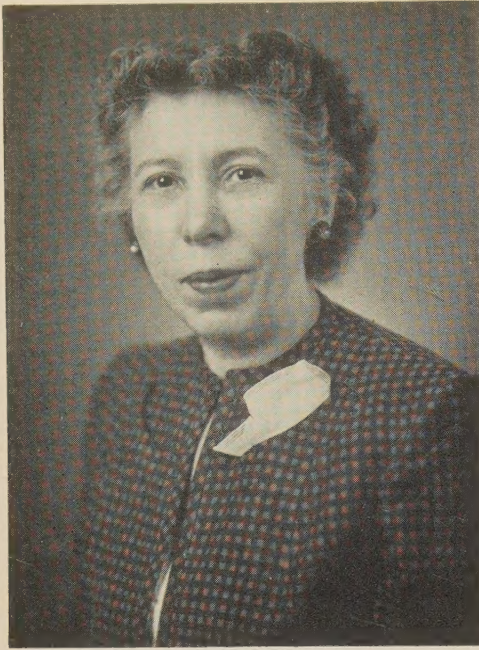
DEAN CURTIS L. WILSON

and of the St. Louis Section AIME. He is a member of the Missouri Society of Professional Engineers and the National Society of Professional Engineers. He is also a member of the St. Louis Engineers' Club, the Mining and Metallurgical Society of America, the American Mining Congress, the American Society for Engineering Education, the Institute of Metals (London), the British Iron and Steel Institute and is an honorary member of the Montana Mining Association and the Kansas City Engineers' Club. He served two 3-year terms as the AIME Representative on the Engineers' Council for Professional Development and as a member of the ECPD Committee on Engineering Schools and Chairman of Region VI of that Committee.

Dean Wilson has been an active member of Rotary since 1928. In 1933-34 he served as President of the Butte Rotary Club and in 1935-36 as District Governor of Rotary in Montana. He is now a member of the Rolla Rotary Club and the Rolla Chamber of Commerce. In 1951 he received the Community Service Award of the Rolla Chamber of Commerce.

(Program continued on next page)

SPEAKER AT ANNUAL LUNCHEON



VERA M. BINKS

Director of Registration and Education, State of Illinois

Vera M. Binks, Kewanee, is the first woman in Illinois to hold a cabinet post. Miss Binks was also the first woman in Henry county to be elected to the bench, having been elected county judge of that county in 1944, the third woman in Illinois to hold such a post. She was re-elected in 1946 and 1950.

Miss Binks studied and practiced law in the Kewanee law office of Thomas J. Welch, a former president of the Illinois Bar Association. During the 17-year period in this office, she handled many jury trials and gained much recognition in her handling of juvenile cases.

During World War II she served on the Governor's committee on civil defense, and for ten years was a member of the advisory board of Geneva State Training School for Girls, and of the Social Agency Board.

Miss Binks was state president of the Business and Professional Women's Club in 1941. She also served as legislative representative for the organization and for several years has been its parliamentarian.

At present Miss Binks is exofficio member of the Board of Trustees of the University Retirement System; Water Resources and Flood Control Board; Board of Museum Advisors. She is exofficio member and chairman of the Board of Natural Resources and Conservation and an exofficio member and, by appointment of the Governor, chairman of the Board of Vocational Education.

Miss Binks was named Director of the State Department of Registration and Education by Governor William G. Stratton in January, 1953. She is a Baptist, and a member of both the Henry County and the Illinois State Bar Associations.

SPEAKER AT ANNUAL LUNCHEON



T. CARR FORREST, JR., President, N.S.P.E.

T. Carr Forrest, Jr., is a native Texan, born at Forrester, in Ellis County. He was educated in the schools of Waxahachie and began his college education at Trinity University. After a second year in college at Texas A & M, he went into the Army in World War I.

He began his own private practice as an engineer in 1921 and has maintained an engineering office continuously since that time.

Flood control occupied most of his energies for the first six of those years—years of pioneering when he was virtually the only engineer in Texas engaged in this work. He has since continued his interest in flood control work.

His experience and service has broadened through the years to include all types of municipal, reclamation, drainage, irrigation and water supply treatment, sanitation engineering practices, and outstanding work in the field of airport development, and industrial planning. During World War II, he extended his practice to include the preparation of plans and supervision of construction of cantonments, airports, and water treating plants for the Armed Forces. Among others were included the 17 million dollar development of Camp Howze at Gainesville and the 23 million dollar development of Camp Maxey at Paris.

His firm of Forrest and Cotton has been retained as Consulting Engineer on the planning of a \$35,000,000.00 low-rent housing project in West Dallas, a suburb near the City of Dallas.

Mr. Forrest long has taken a leading role in pushing the development of engineering as a profession dedicated to community service. In addition to being a member of the National Society of Professional Engineers, he is a

member of the American Society of Civil Engineers; American Institute of Consulting Engineers; Society of American Military Engineers; American Water Works Association; Dallas Technical Club; Dallas Engineers Club; Dallas Chamber of Commerce; Greater Dallas Planning Association; Tau Beta Pi.

He has served in the capacity of President of the Dallas Technical Club; The Dallas Post, Society of American Military Engineers; The Dallas Branch, Texas Section, American Society of Civil Engineers; Vice-President and President of the Texas Section, ASCE.

THE DISTAFF SIDE

Shall We Join the Ladies?

(Prepared by Mrs. D. H. Murphy)

The Ladies and Gentlemen of the St. Clair Chapter of the ISPE are really going to town planning a nice convention time for the visiting Professional Engineers and their wives. We have heard all that the men are planning and we know what the ladies are planning, and it becomes more and more apparent that you just can't afford not to come to East St. Louis on March 25, 26, and

27. The ladies, under the direction of Mrs. Raymond G. Brichler, chairmen, and Mrs. Arthur Feickert, co-chairman, have issued letters of invitation to the wives of all engineers listed in the directory. Genial host Steve Casteel, General Chairman of the Convention, is going all out in his efforts to help his committees plan a whiz-bang time for all . . . and he is being ably backed by Chapter President Arthur Feickert and State President Raymond G. Brichler.

You are all receiving letters and notices of some of the things that are being planned, so start dusting off the luggage, girls, and just don't let the old man say "No." See that he gets his reservations in, buy a new bonnet, and come on down to East St. Louis and leave the rest up to us . . . we'll see that you have a good time. Even if you don't know a soul, we'll see to it that you soon do. Cards, luncheon, breakfast, sightseeing, smorgasbord, "Meet and Greet," shopping, refreshments (wonder what that means?), it will all add up to a wonderful time for us ladies while the men ponder the more worthwhile aspects of our profession. So how about it, ladies . . . it's up to you.

(Continued on next page)

Co-Chairmen, Ladies' Program

69TH ANNUAL MEETING—EAST ST. LOUIS—MARCH 25, 26, 27



MRS. RAYMOND G. BRICHLER



MRS. ARTHUR J. FEICKERT

Chairmen of Local Committees, Ladies' Auxiliary, St. Clair County Chapter, ISPE Convention, East St. Louis, Illinois, March 25, 26, 27, 1954: Mrs. Raymond G. Brichler, Mrs. Arthur Feickert, Co-Chairmen; Mrs. Earl Markwardt, Reception; Mrs. Melvin Dobbs, Registration; Mrs. F. G. Olbrich, Card Party; Mrs. Stephen C. Casteel, Breakfast; Mrs. G. W. Kennedy, Tours; Mrs. David J. Johnston, Surprise Entertainment; Mrs. Fred R. Friedewald, Decorations; Mrs. Ralph Hodges, Publicity; Mrs. Devereux H. Murphy, Convention Publicity.

Mrs. G. W. Kennedy and Mrs. David Johnston are planning among other things, a "Nose-Bag Luncheon." Ever been to one????? Neither have we, but we aim to be there to find out what it's like.

* * * *

Mrs. F. G. Olbrich and Mrs. Sam Daniels are planning a card party and have arranged for a most interesting speaker. Are you Scorpio, Sagittarius, or Capricorn? Hmmmmmm? Better find out so you'll know what she is talking about.

* * * *

Mrs. Stephen Casteel and Mrs. Devereux Murphy are planning a lovely, lovely spring breakfast—"The Mad Hatter Breakfast." Mrs. C. had a committee meeting the other day, and really we can hardly WAIT until you see our surprise. You'll have to be here, though, to see it.

* * * *

Mrs. Earl W. Markwardt is in charge of the "Meet and Greet" room . . . and it's here you'll be able to greet old friends and meet new ones. Coffee all the time, too.

* * * *

Mrs. Melvin Dobbs and Mrs. Charles Manion are in charge of registration . . . so you'll be properly identified and you'll know who's who. So DO keep after the old man to send in the reservations . . . and brush up the suit . . . and don't go to any trouble, but COME.

You'll be sorry you didn't if you don't. (Perish the thought.)

* * * *

Oh, and GIRLS . . . we'll have to be very discreet about this . . . so don't tell the men . . . but do you like champagne? Yes, we said CHAMPAGNE . . . We've planned some of that for you too, but I wouldn't mention it if you think he won't approve. HE might come and make YOU stay at home, and we wouldn't want THAT to happen.

* * * *

Mrs. Fred R. Friedewald is in charge of the decorations. You know, she is an expert on, and a whiz with, flowers, so it will pay you to come down and study her flower arrangements. She'll have something worth seeing . . . you can bet on that.

IT MAY NOT HAPPEN

Many folks worry about things that never happen. It is like the patient in the mental hospital, holding his ear close to the wall, listening intently. The attendant finally approached.

"Sh!" whispered the patient, beckoning him over.

The attendant pressed his ear to the wall for a long time. "I can't hear a thing," he finally said.

"No," replied the patient, "it's been like that all day!"

St. Clair Holds 25th Anniversary Banquet



CHAPTER OFFICERS AND LADIES AT SPEAKER'S TABLE

Left to right: Mr. S. C. Casteel, General Chairman, Annual Meeting Program; Mrs. L. J. Keenan; Mr. L. J. Keenan, Chapter Representative; Mr. Ross Shannon, Speaker of the Evening; Mr. A. J. Feickert, Chapter President; Mrs. Ross Shannon; Mrs. A. J. Feickert; Mrs. R. G. Brichler; Mr. R. G. Brichler, President, I. S. P. E.; Mrs. S. C. Casteel.

ENGINEERS? A MILLION DOLLARS WORTH

(Prepared by B. H. ALLEN, Mgr.,

Engineering Societies Personnel Service)

The Chicago Advisory Committee of the Engineering Societies Personnel Service, Inc., reports that the starting salaries of the engineers placed through the Service by the Chicago office in 1953 totaled \$1,013,686.00. This figure was accomplished in spite of the acute shortage of engineers available for the many positions open to them. The average starting salary for all types and levels of engineers was \$6,670.00.

It is also reported that there are about fifteen positions open for every man available, but the men must be qualified for the positions before companies will employ them and the shortage of men does not mean that companies will hire a man just because he has an engineering degree.

The Committee also announced its new officers for 1954. These men are: Chairman, Lemuel J. Dunlap of Westinghouse Electric Corporation, and represents the American Institute of Electrical Engineers; Vice-Chairman, Major Adolph J. Langsner of Northwestern University and a consulting engineer who represents the American Society of Mechanical Engineers; Treasurer, A. L. R. Sanders of Hazelet and Erdal, who represents the American Society of Civil Engineers; and Secretary, Bonnell H. Allen, Chicago, Manager of Engineering Societies Personnel Service, Inc.

These men were duly installed by Alfred H. Meyer, Executive Director of E.S.P.S. at the Annual Chairmen's Meeting on February 25, at the Western Society of Engineers. Mr. Ernest Hartford of the American Society of Mechanical Engineers and President of E.S.P.S. for 1954 presented a certificate of appreciation to Virgil E. Gunlock, junior past chairman of the Chicago Advisory Committee at the same meeting.

The Chairmen of the local sections of the American Society of Mechanical Engineers, the American Society of Civil Engineers, the American Institute of Electrical Engineers, and the American Institute of Mining and Metallurgical Engineers and the presidents of the Western Society of Engineers and the Chicago Chapter of the Illinois Society of Professional Engineers were invited to attend this meeting.

The Chairmen of C.A.C.-E.S.P.S. in recent years have been Virgil E. Gunlock, 1953; J. N. Stanbery, 1952; John F. Seifried, 1951; and Dean O. V. Eshbach, 1950.

Plans were discussed to extend the Service to more engineers for 1954. E.S.P.S., a non-profit service for engineers, was established in 1918.

* * * *

"A traffic sign or light may not give you a ticket, if you don't obey it, but it may save your life if you do."—*Clifford E. Peterson*, California Highway Patrol Commissioner, noting that 232 persons died last year in California as a direct result of ignoring traffic signs.

ON ENGINEERING AND PROFESSIONS

By W. L. DUCKER*

(From *Texas Professional Engineer*)

In spite of the unity of purpose that characterizes the efforts of all of those who have concerned themselves with the professionalization of engineering, and in spite of the almost unanimous support they are receiving from the rank and file, there nevertheless seems to be a quite inappropriate uncertainty and indecision throughout concerning the nature and validity of the fundamental aspects and concepts on which the profession is to be established, and even concerning the nature of the profession itself.

Of course there are certain accouterments that are agreed to be essential concomitants of a profession. It is agreed for example that there should be state laws governing the profession, a board of examiners, examinations for applicants, issuance of licenses, professional consciousness, professional publications, college training, et cetera. Yet, what is there here to distinguish engineering from the Hot Towel and Tonic Brotherhood, who affirm professional status through the possession of all of these things, including their own colleges, and who revel as well in the joys of complete unionization and a system of tipping comparable only to that of the menial who simultaneously grooms the opposite extremity of the customer.

It is agreed that there should be a code of ethics. But is the necessity and the reason for such a code generally appreciated? Or is that item considered with the same degree of profundity that marked Tom Sawyer's commentary on the Golden Rule, as being something that seemed to help everyone but himself. Is a code of ethics a polite accessory to the profession, or is it a real and indispensable part of the structure of the profession?

Then also is heard throughout the land the question of engineering's right even to presume to claim professional status; and all arguments on that point break down through the lack of an adequate definition of a profession.

What Is a Profession?

What in fact are the marks of a profession? Are they in the nature of cosmetics that can be self applied by any hag to give an appearance of seductive charm, or are they like Indian war paint that can be self applied to terrorize the prospective victim into appropriate submission? Or, are the marks of a profession more in the nature of birth marks that can neither be voluntarily acquired nor easily removed?

That these questions and many others should be is not too surprising when it is considered that the birth of a

* The author is Chairman of the Department of Petroleum Engineering of Texas Technological College at Lubbock, Texas. He holds licenses in Oklahoma and Texas and is a member of the National and Oklahoma Societies of Professional Engineers.

learned profession is an event (possibly more rare than blessed), that happens only a few times in a millenium. Without violating history too much, it could probably be said that the birth of the medical *profession* occurred sometime during the nineteenth century, the legal *profession* a century or two earlier, Christian theology a few centuries before that, while the date of birth of the military is lost in antiquity. It should, therefore, be expected that those charged with the obstetrics at the natal couch of the engineering profession would lack those aptitudes and skills that are born of vast experience.

Nevertheless, if engineering is to be established as a learned profession, and in the manner that will allow it most effectively to discharge its duties and obligations and accept its responsibilities, these fundamental things must first be rationalized.

Unless the structure of a profession is in truth a pure fabrication of unsupportable fancies, some manner of rational analysis should yield a few basic facts that will be acceptable to the reason, and on which can be built a logical structure that will be relatively impregnable to attack. And until something of this nature is accomplished, the profession of engineering will be building on an insecure foundation and will be inherently vulnerable and indefensible.

Profession Concept Analyzed

Attempting to analyze the *profession concept*, it would seem probable that in its relations to society would be found the fundamental indicia of the profession. Examined in this light, there immediately emerges one characteristic that is common to all those services that are generally accepted as being of truly professional status. That being that *the services of the profession are of a nature vitally essential to society*. There can be little question of the professionalism of those services that conform to the index. A second characteristic of these generally accepted professions and one that also seems to be fundamental, is that *the skills involved are of a high order and are laboriously acquired*.

To continue the analysis; just as the services of the profession are vital to society, then conversely *society is vitally dependent on the profession*; and as the skills of the profession are of a high order and are laboriously acquired, it follows that the profession *cannot be unseated and another group readily recruited and trained to render that service*. Thus, society finds herself in the unhappy position of being dependent upon, and therefore *vulnerable to exploitation* by, a group that is both *essential and irreplaceable*. This situation is beyond any doubt the crux of the matter, for one horn or the other of society's dilemma will be found missing in the case of any sub-professional service that is less than essential, or where the skills involved are easily acquired and the group therefore easily replaceable.

However, where the services are truly vital to society and where the skills involved are of a high order, society

has not escape from the situation and must accommodate it as best she can. In this situation, there seem to be only two courses to be followed. One being that society may, if possible, prevent the organization of the profession, and thus conceivably prevent any concerted action that might lead to such exploitation. But by thus preventing the organization of the profession, society would be denying herself the benefits that would accrue to her in the form of technical advancements that are most readily made by a well integrated technical group. The course is for society to enter *into a pact with the profession*, wherein society agrees to permit and encourage the organization, growth, and development of the profession in return for the profession's agreement to render its service to society, to develop its technology, and *hold society at all times immune to exploitation*.† This latter course is the one that is in fact followed in the case of all of the recognized professions.

But such a contract will only be made with a responsible group of the highest integrity, for the trust involved is too great to be committed to any less. And obviously, such a contract will not be made before the group has adequately demonstrated its responsibility and integrity, nor before it has sufficiently recognized the magnitude of the trust involved. Therefore the pact with society must be developed as the responsibility and integrity of the profession is demonstrated, and as the resulting and enabling organization is developed. Therefore a profession that finds itself in the mid-stages of organization, as does engineering today, need direct its greatest efforts toward the fullest establishment of this contractual relationship.

Engineering Has Framework

An examination of the present state of development of the engineering profession will show that it now has reasonably adequate structure or framework of the basic requirements of a profession. It has its various state laws governing the practice of engineering and it has the appropriate mechanisms for the administration of these laws. It has a well organized membership on the national, state, and local chapter levels. It has national, state, and probably some local district publications. It has a fairly well integrated and recognized code of ethics of practice. All of these things are a part of either the contract with society, or of the performance under that contract. The state laws governing the practice of engineering, and all activities and administrative affairs relating to those laws are the principal part or body of that contract. The professional publications, professional meetings, and similar activities are a part of the program whereby the profession develops its technologies and governs its own practices. The code of ethics and the practice thereof constitutes the exercise and demonstration of the integrity of the profession. The professional

† Unless such a pact is made, and unless the profession's performance under the pact is equable, society has a third choice: that of placing the profession under government regulation.

consciousness in general is evidence of its recognition of the trust.

Obviously none of these parts of the program of professional development have reached their final level of refinement, but the shortcomings of each are recognized, and they are under constant attention, correction, and development. They probably never will, and certainly never should, attain a level of refinement and development that in any manner approaches completion, because they are of a nature that must undergo constant evolution to maintain proper adjustment to the times. Nevertheless, these matters are well recognized and are under constant attention.

It has been pointed out that a profession had its basis in a contractual relationship between society and the technical group, and ways have been suggested wherein that contractual relationship should be improved and the profession of engineering thereby advanced. However, those things do not complete the field of endeavor for the profession seeking its highest level of advancement. There remains one item which was not mentioned but is of the utmost importance to the proper development and execution of any joint enterprise of the nature therein discussed. That is the matter of communication and exchange of information between the two parties to the contract. Obviously the progress of any joint enterprise will be retarded in whatever degree either party remains in ignorance of the intentions, actions, and accomplishments of the other party. In the case of engineering, the development of the profession will be, and probably is being, retarded through society being inadequately advised of matters within the profession which are of concern to society. Remembering that the profession advances only at such rate as society may permit, and the extent that society will permit can only depend upon society's intimate knowledge and understanding of the profession.

Therefore, while engineering is seeking means whereby the profession may be most rapidly advanced and developed, it should give careful thought to the matter of disclosing, explaining, and justifying to society its various aims, activities, and aspirations, for certainly engineering is one of the least commonly understood and appreciated broad activities making up the civilization we have today. And along with a popular understanding and appreciation of engineering in all of its ramifications, would come that dignity and respect and all of those things pertinent thereto that the profession of engineering now so signally lacks.

Advertise to Enlighten Public

If these propositions are valid the public must be reached with some manner of educational program that will fully enlighten them on the nature of the practice of engineering. This cannot be done by any program of expository articles published in the popular press, because such articles would not be universally enough read. The only plausible method of attack on this problem

would be through a campaign of appropriate education (advertising) on the radio and in the magazines making up the popular press. Such a program of advertising carried on continuously and intelligently could and would ultimately inform the public in rather great detail concerning all matters relating to the practice of engineering. However, there is one obviously apparent difficulty to such a proposed program. That being the tremendous costs that would be involved.

However, there has been carried on for many years such an advertising program directed toward an explanation and dignification of the medical profession. This program is largely sponsored and paid for by the various drug manufacturers—and they obviously feel that it is to their advantage to do so. These drug manufacturers are in a peculiar position in that their products are held to such high standards of uniformity and purity that no one of them can claim any superior properties for their products; and in that light, they have nothing to individually advertise. However, they do spend very large appropriations for advertising in the popular press, and this advertising takes the form of *explaining, promoting, and dignifying the medical profession*. They thereby hope to promote the sales of their own particular brand of standardized products through *gaining the good will of the medical profession* by these means.

Manufacturers Could Solicit Goodwill

At the same time there are many manufacturers of equipment related to engineering that through the nature of their business and nature of their products have as little to advertise as do the drug manufacturers.

Major steel companies producing structural shapes all manufacture a line of products so uniform and so standard that there's no occasion to advertise any special properties, with the result that one make of structural shapes is just as desirable as another. The same situation exists in the manufacture of most steel tubular goods. Also Portland Cement. Manufacturers of large power equipment, such as General Electric, Westinghouse, Allis Chalmers, and others, certainly do not sell any of those classes of products through the result of advertising. The manufacturers of locomotives and trains do not sell any of those products as the result of advertising. There is, however, one thing in common, and that is that almost all of these products are bought on the recommendation and specification of engineers and in that respect it would be to the advantage of those companies to solicit the good will of engineers by supporting for the engineering profession an advertising campaign of a nature similar to that carried on for the medical profession by the manufacturing drug houses. Another advantage that would accrue to the sponsors of such a campaign would be that it would afford them a vehicle whereby they could keep their name before the public, and that is of course of vital importance to them.

The life insurance companies have a direct dollar stake in the health of the public, and the health of the population is to a great measure dependent on a vigorous and popularly acceptable medical profession. Therefore the life insurance companies, recognizing it to be to their advantage, spend large sums annually in promoting the medical profession through advertising in the popular media. If these things are true, does it not also follow that the life insurance companies would be equally concerned with a vigorous engineering profession as a safeguard to public health through the works of engineering involved in public water supply, sanitation, drainage, sewage disposal, air conditioning and related works?

If this is true with the life insurance companies, is it not equally true that all of those other companies that insure plants, structures, process equipment and the safety of workmen, have also a dollar stake in good engineering? If so, they also should see the dollar advantage to themselves in a vigorous and healthy engineering profession, and should be as ready to contribute in a like manner to the promotion of this profession.

Local and State Levels Have Tasks Too

This part of the program must of necessity be carried out on the national level, and a part of the efforts of the National Society are being directed toward these ends. On the other hand there are many things that can be done on the state and local chapter level to advise the public, or society, of the nature of engineering and of the engineering profession. A notable example may be seen in the accomplishments of the Oklahoma Society, who have sponsored an annual state-wide "Engineering Week"; proclaimed by the governor of the state and heralded by all appropriate fanfare. During "Engineering Week" the Oklahoma radio and press devoted a great amount of time and space to material that explains, dignifies and honors both the profession and the work of the engineer. Engineering programs are presented at all of the civic clubs and like organizations. The local chapters or sections, in cooperation with local industries, prepare engineering displays in prominent store windows and sponsor engineering programs in the schools.

By these and similar means the public can ultimately become as informed on the nature and place of this vitally essential profession as they are in the case of medicine or law, and when the goal is achieved, one of the greatest handicaps to the development of the profession of engineering will have been surmounted.

I hold every man a debtor to his profession;
from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves by way of amends to be a help and ornament thereunto.

Sir Francis Bacon

THE CARE AND FEEDING OF AFTER-DINNER SPEAKERS

From "Louisville Engineer & Scientist"
June, 1953

"A speaker—contrary to appearances—is of value," writes George Marsh in the *New England Printer*. "He enables you to sell \$3.50 dinners for \$5.00. He has several other worthwhile qualities, and should be treated with care, before, during, and after the ceremony.

"In picking a speaker, pick one from a long way away. A man gets more expert as he gets farther from home.

"To make landing your fish more certain, appeal to his cupidity or egotism. Tell him he will better his business by making himself heard by so many potential customers. (Use this especially if he's got to sell his boss on the junket.)

"Write to him several times. He'll be less apt to wire his regrets three days before the meeting.

"Give him all the facts. Tell him where and when the meeting is to be. Settle definitely on the title of his subject and its length. Whether you pay or not, bring up the matter of expenses and fees immediately.

"Pick him up and take him to the meeting. At least be certain that he can find the basement of Rabinowitz's Rathskeller alone. Help him arrange his material, lights, slides, screen, easel, microphone, etc. And try, *do try*, not to have the first slide go on upside down.

"Start on time. A laggard policy progressively worsens. Don't make it worse by expanding your introduction into a personal appearance. Try to pronounce his name correctly and get the facts right. Don't apologize for having brought him.

"If he is to answer questions, better have someone to act as a buffer—someone who can discourage the talkative, the querulous, the incorrigible.

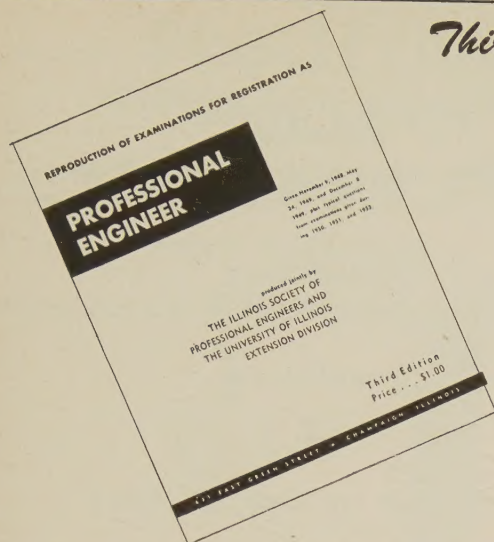
"Compliment the guy. Tell him he was wonderful. He knows better, but it makes him feel good."

WORRY CONTROL

Have you ever noticed that the engineers you know, who worry, are vexed with small problems—thousands of them—and the engineers who face big ones are the least worried?

The difference between the two engineers lies in their personalities and not in the problems they have. Given the same problem with all of its responsibilities simple or complex, one engineer will keep his mind on the objective, separate the problem into one or two major approaches. Keeping his mind clear, he stays emotionally stable—whatever happens. The other engineer drives through his conscious hours, stumbling from one worry into another, from one crisis to another. One is a statesman, the other a politician; one is an executive, the other just a worker; one is a pillar of strength and leader, the other a thorn.

How many of us stop long enough in the middle of a project to re-examine the objective and reset our sights?



Third Edition . . .

PROFESSIONAL ENGINEERING EXAMINATIONS

New Book includes all of the examinations published in the first and second editions plus typical questions from the examinations given by the Department of Registration and Education, State of Illinois during 1950, 1951 and 1952.

SAME LOW PRICE—\$1.00 post paid. Use the coupon:

Third Edition of the Examination Questions Book.

Name.....

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Enclosed is.....dollars for.....copies.

Send order to Secretary's office
631 East Green Street, Champaign, Illinois

An engineer gets so used to accepting the responsibilities of the day that he may lose sight of the culmination of the project. Habit gets us to think of daily objectives without any thought of what is happening to the over-all picture.

New approaches appear when we sit still and think. The engineer begins to realize that he is worrying because he lacks the over-all objectives and because he cannot fit the scattered daily tasks into a permanent perspective.

The engineer who can integrate his objectives broadly enough to cover any situation has a good start on his "Worry Control." The man with a personal money or power objective will find a good many over-all problems, hard to reconcile, so he will be subject to more stress and strain than the engineer who has service and harmony with his fellow-man in mind.

The engineer who has a broad integrated objective does not face new problems all the time, but realizes that the new problem is only an additional phase of the existing ones. Each daily development of problems automatically falls comfortably, neatly, and harmoniously into completing his perspective.

Most engineers strain more on three activities than by handling six with a common objective. By combining a lot of little problems into one big one, the engineer can handle more problems and thus have strain reduction in his worries.

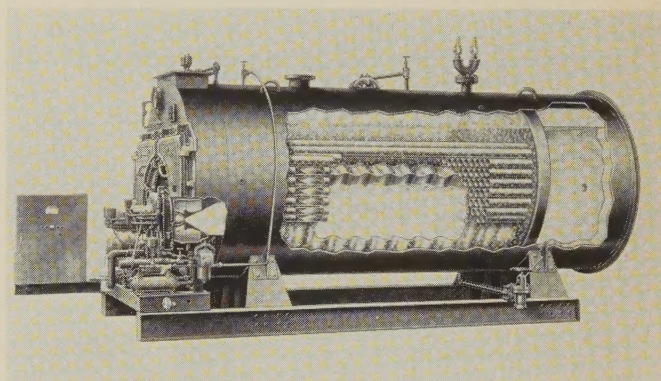
How is your "Worry Control"?

JOE ATWOOD
Milwaukee Engineering

"I am sure, as I look back, that I would much rather ride in one of those early cars on a modern highway than in a modern car on one of those early highways."—William C. White in the *New York Motorist*, telling of his early trips in a 1902 U. S. Long Distance, 1904 Pierce-Arrow, and a Waverly Electric.

ANNOUNCES NEW BOILER UNIT (See Cut)

The new Kewanee-Petro Boiler-Burner Unit has been jointly announced by Kewanee-Ross Corporation, Kewanee, Illinois, and Petro, Cleveland 11, Ohio.



These new units are designed to satisfy the need for a fully integrated and skillfully engineered boiler-burner combination, with wide flexibility of application. Boiler-burner units include both steam and water models, ranging in sizes from 39 to 456 h.p. for high pressure steam and from 1,313,000 to 15,300,000 Btu for 15 lbs. steam or 30 lbs. water. All models are available, equipped for firing No. 6 or lighter oil, or for high or low pressure gas, or for a combination of the two. With combination models, shifting from one fuel to another is quickly and easily accomplished.

While engineered as one complete boiler-burner unit, the boilers and burners are separately manufactured by the two companies. The boilers, shipped direct to the job from Kewanee, Illinois, are Scotch type, pre-tested, equipped with all necessary accessories, and mounted on steel skids. Burners, shipped from Cleveland, include forced draft air supply and all combustion controls, mounted and pre-wired in one central control cabinet. The burner, controls and accessories are completely assembled and factory tested before shipment.

Matching connections make it possible to attach the

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burner to the boiler quickly and easily. Refractories are integrally mounted at the factory, cutting time and labor required in the field to an absolute minimum. Forced draft burner operation eliminates the need for a high stack; a small vent, extending above the roof, is the only requirement. Boilers, manufactured by Kewanee-Ross, conform to American Society of Mechanical Engineers boiler construction code, and are rated in accordance with the established code of the Steel Boiler Institute. Burners, built by Petro, are approved by Underwriters' Laboratories, Inc. Local service will be supplied on the boiler-burner units by the combined Kewanee and Petro field organizations.

A 16-page illustrated catalog published jointly by Kewanee-Ross Corporation and Petro includes complete data and specifications and will be available soon from either company.

"When a dealer quotes you a price on a new model car, mentally subtract about one-third of the price and you'll have the amount you are actually being charged."
—Harvey Campbell in *The Detrouiter*, speaking of taxes.

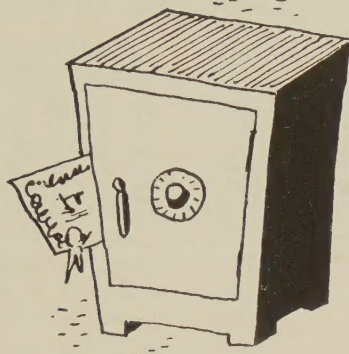
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One of the illusions of life is that the present hour is not the critical, decisive hour. Write it on your heart that every day is the best day of the year.

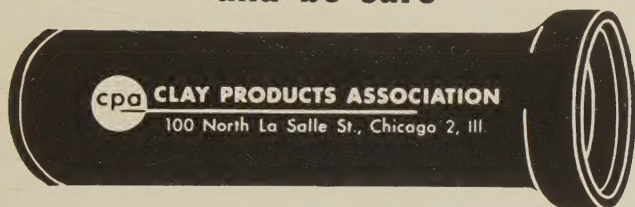
—Emerson.

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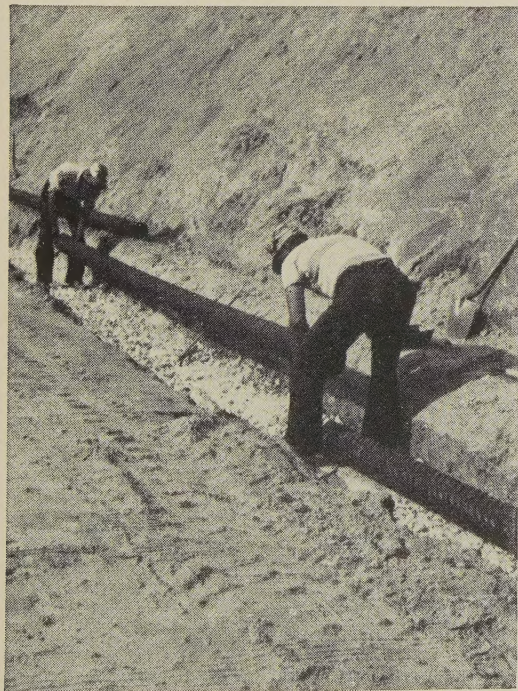
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SPECIAL NOTICE

For your convenience the Chicago office will be open Wednesday evenings until 7:15. This schedule will continue through February and March on a trial basis. We will be here to help you. Come in and see us.

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Engineer. 27. Thirty yrs. Jr. Engr. working with and testing radar indicators, and radar test equipment. \$5,000. Chicago. 811CB

Plant Engr. ME, 33. Four yrs. engineer performing tests on power equipment and writing reports. Three mos. assisting fitter in machine shop in disassembling machine parts and reassembling again. \$5,700. Midwest. 812CB

Plant Engineer. ME, 31. Three yrs. plant engr. supervising maintenance, plant layout, fixture design, purchasing. Three yrs. designing, layouts, checking supervising of detailing group. \$6,000. Midwest. 813CB

Project Engr. ME, 28. Four mos. drafting & design modification of existing equip. & new equip. Twenty-one mos. plant equipment investigation, spec. writing and inquiry writing. Three & one-half yrs. customer representative on the inspection of all types of steel piping & plant equipment. \$5,700. U.S. 814CB

Product Engr. ME, 31. Seven mos. develop tools, dies, & processing for pipe & fittings. Thirteen mos. set up tooling & processing of waveguides and other electronic equipment. Four mos. develop equip. such as weightmaking machines. \$6,500. Midwest. 815CB

Chem. Engr. BS Chem. Eng., MS—Ind. Engr., 49. Twenty-eight yrs. doing development, sales, financial, patents, cost analysis & controls, job evaluation, special management assignments. \$15,000. Midwest. 816CB

Ind. Mgmt. Engr. Ind. Engr., 27. Thirty mos. supervise time study & payroll men, wage incentive plan, did labor estimating,

made up & controlled process sheets. Four mos. Time studies on screw machine products. \$5,700. Chicago. 817CB

Ind. Mgmt. Engr. 26. Eleven mos. time study methods analysis, plant layout, on jet engines. Six mos. work up cost estimates from blue prints in an electronic components mfg. plant. \$5,000. Midwest. 818CB

Jr. Engr. ME, Agric. Engr., 26. Four yrs. chief industrial engineer doing all phases of industrial engineering. Three yrs. Sr. Lab. Tech. doing research on various projects. \$5,400. Chicago. 819CB

Plant Engr. 36. Two yrs. plant engr. doing plant layout and material handling methods. Four yrs. asst. plant manager for flour mill. Twelve yrs. plant engineer, maintenance, plant layout, material handling. \$6,000. Midwest. 820CB

POSITIONS AVAILABLE

Chemical Engr. Development. Possibly B.S., M.S. or Ph.D. Age: 28-50. 5 yrs. exp. develop. of fabric belts or development in "felt" or weaving exper. Knowl.: all synthetic fabrics (nylon, orlon, Dacron, etc.). Duties: develop. of belt preferably made out of a miracle synthetic fabric that can absorb heavy quantities of water mixed with detergents, oil, etc. Belt applicable to a new product in large appliance field. Sal.: \$6,000 to \$9,000. Employer will negotiate fee. Very limited traveling if any. Location: Indiana. C-1538

Consulting Engr. Well versed in refining operations of bismuth and able to redesign or improve equipment or processes as needed. Duties: increase bismuth to highest purity obtainable in plant now in operation but far from modern. Sal.: \$1,000 mo. plus allowances. Location: Korea. C-1593

Engineering Recruitment Officer. Engrg. Deg. 3 plus yrs. exp. in personnel, recruiting, or similar activities. Knowledge of engineering positions. Duties: travel Midwest recruiting engineering personnel for large aircraft manufacturer. Salary \$7,500-\$9,000. Travel: great deal. Location: Chicago. C-1594

Maintenance Engineer. Engr. Deg. Age: Up to 45. 3 plus yrs. exp. in maintenance and repair of heavy equipment. Knowl.: chemical or mining operations. Duties: maintenance and repair of heavy equipment for a chemical and mining company. For a manufacturer of minerals. Sal.: \$6,000-\$8,000. Location: Florida. C-1595(c)

Chief Electronic Engr. EE Preferred. Exp. in electronics using audiometers, transistors, or audio equip. and desirable in hearing aids. Know: circuitry. Duties: heading up

electronic section on research & development of hearing aids. For Mfg. of hearing aids. Sal.: \$8-12,000. Loc.: Chicago. Employer will negotiate fee. C-1600

Sales Engineering Trainee. Engrg. Deg. Age: 25-29. Must have been an honor student and have definite sales aptitude. Knowledge of industrial machinery. Duties: sell complete lubricating program to industrials covering full line of petroleum products. Deal with top management for most part. With major oil company. Training position. Salary: \$4-450 per month. Employer will negotiate fee. Location: Chicago. C-1605

Maintenance Engineer. Age: 40 or over. 5 plus yrs. exp. in maintenance of rubber or textile fabricating machinery. Duties: maintenance engineer on heavy plant equipment for a felt manufacturer. Salary: up to \$9,000 per yr. Employer will pay fee. Location: Chicago. C-1619

Metallurgist. Technical Division. 3 plus yrs. in foundry trouble shooting and preferably in magnesium or aluminum. Knowledge of magnesium and casting. Duties: foundry trouble shooting, customer complaints on technical questions, and supervision of routine testing laboratory. For a mfr. of magnesium castings. Salary: \$700 mo. up to \$12,000 depending on background. Employer will pay fee. Location: Chicago. C-1626(a)

Metallurgical Project Engr. Met. or met. engr. 3 plus yrs. exp. in white metal foundry practices. Knowledge of magnesium processing helpful. Duties: project work on development research projects or magnesium. For a manufacturer of mag. castings. Salary: \$550-\$650 per mo. Employer will pay fee. Location: Chicago. C-1626(b)

Supervising Project Engineer. ME. 3 plus yrs. exp. in machine shop tooling and preferably in pumps and valves. Supervisory ability. Duties: organize, scheduling and direct all engineering work necessary for custom-built pumps, valves and hydraulic equipment. For a manufacturer of pumps. Salary: \$550 to \$750. Employer will pay fee. Location: Chicago. C-1626(c)

Safety Engr. BS or ChE or Chem. Engr. Over 28 yrs. 5 yrs. exp. resp. ind. safety exp. in chemical mfg. plant. Knowl.: Chemical engrg. procedures and safety methods. Duties: formulation "selling" and carrying out comprehensive safety program. Will be given responsibility for safety program of large division of company, expected to direct work of others in division safety dept. For manufacturer of chemicals. Sal.: \$6-8,000. Location: Missouri. C-1669